

November 27, 2020

Mr. David Albright
Manager, Groundwater Protection Section
USEPA Region 9 (WTR-4-2)
75 Hawthorne St
San Francisco, CA 94105

Subject: Underground Injection Control (UIC) Permit Number R9UIC-AZ3FY11-1
30-Day Report for AL/AQL Exceedance for Adjusted Gross Alpha at Monitor Well M60-O

Dear Mr. Albright:

Florence Copper is providing this 30-Day Report for an alert level (AL) and Aquifer Quality Limit (AQL) exceedance for adjusted gross alpha at monitoring well M60-O under Underground Injection Control (UIC) Permit Number R9UIC-AZ3FY11-1 (Permit) under Parts II.H.2.a.iv and II.H.2.b.iv.

On October 5, 2020, Florence Copper became aware of a potential AL and AQL exceedance for Adjusted Gross Alpha at monitoring well M60-O from a sample collected on September 24, 2020. The laboratory result for this sample was 29.9 ± 3.8 pCi/L. The AL and the AQL for adjusted gross alpha are both 17.4 pCi/L for this well. As outlined in Parts II.H.2.a. and II.H.2.b. of the Permit, Florence Copper collected a verification sample on October 8, 2020 which confirmed the AL/AQL exceedance with an adjusted gross alpha result of 18.7 ± 2.5 pCi/L. Florence Copper submitted notification of the results for the verification sampling to EPA within 5 days on October 29, 2020 as per Parts II.H.2.a.ii and II.H.2.b.ii.

As required by Part II.H.2.b.iv. of the Permit, Florence Copper is submitting this written report providing an evaluation of the cause, impacts, and mitigation of the AL/AQL exceedance.

Following verification of the exceedance, Florence Copper initiated an investigation into the cause of the AL exceedance. No malfunction or failure of pollution control devices or other equipment or processes occurred that contributed to the alert level exceedance.

Hydraulic control on the south side of the wellfield has been maintained as required by the permit throughout operation of the PTF and continues today.

The exceedance does not appear to be related to solutions migrating from the wellfield. This conclusion is based on 1) elevated concentrations (above ambient concentrations) for gross alpha in this well were documented 2 months prior to wellfield operations commencing, and 2) no parameters that are indicative of the solutions injected into the wellfield (i.e., pH, conductivity, sulfate) are showing elevated concentrations in this well's water quality.

To mitigate the exceedance, Florence Copper conducted visual inspections of the well using a video log, and initiated pumping at M60-O for several hours a day for a week. M60-O and nearby wells were also redeveloped. Redevelopment consisted of swabbing the well's casing to remove buildup from the well screen and airlifting to clear the liberated debris.

In October 2020, responding to the possible exceedance, a pump was installed in nearby observation well O-04 which is being run for one hour, twice a day. A second video log was run on M60-O in November, and showed a relatively clean casing and screen. Following the video log, the well was again redeveloped by airlifting.

Laboratory results from a sample collected from M60-O on November 5th are pending at this time. Should these results continue to exceed the AL/AQL for adjusted gross alpha, Florence Copper will collect radiochemistry samples from up-gradient oxide monitoring wells M24-O (southwest of the wellfield) and P49-O (south of the wellfield).

Additional investigative actions that have been taken include the collection of a duplicate sample from M60-O in November, which was sent to a different laboratory for analysis of gross alpha and adjusted gross alpha. Preliminary results from the duplicate sample show a gross alpha of 49.2 pCi/L and adjusted gross alpha of 14.4 pCi/L. These independent laboratory preliminary results are below the Permit AL and AQL of 17.4 pCi/L for adjusted gross alpha.

Please feel free to contact me should you have any questions or comments.

Sincerely,
Florence Copper, Inc.

Jennifer Saran
For Brent Berg

Brent Berg
General Manager

Cc: Nancy Rumrill, EPA Region 9
Maribeth Greenslade, ADEQ